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VOLUME XXVII SEPTEMBER, 1928 NUMBER 6

MANUFACTURING IN THE UNITED STATES*

R. H. WHITBECK
University of Wisconsin

Manufacturing once meant "making by hand," and manufactured goods were originally "hand made" goods. This meaning fitted well until the invention of the steam engine and of power-driven machinery, about the time of the American Revolution. These inventions started a new era in human history, and, so far as the making of things is concerned, man has made immeasurably more progress since that date than in all previous ages combined.

DEPENDENCE OF MODERN MANUFACTURING UPON SPECIAL MACHINERY AND MECHANICAL POWER

It is not always easy or entirely safe to take groups of pupils to visit factories. But there is only one way for them to understand the real meaning of machine manufacturing, and that is to see it. Most boys and many girls get into factories quite apart from school work, but not all. It is almost futile to talk about modern manufacturing to pupils who never saw it operating. To manage in some way to see that the children have this experience is one of the essentials in teaching manufacturing.

Familiar illustrations of the efficiency of the machine over hand labor may be seen in the sewing machine, the washing machine, or the lawn mower. Ask any woman how much faster she can sew with the machine than by hand, or estimate the time saved by using a lawn mower instead of a sickle. These are simple machines. With one of them, a person can do ten or twenty times as

*AUTHOR'S NOTE. When requesting this paper, the Editor of the *Journal of Geography* wrote: "In this series I am hoping to get people who will get away from the scientific research viewpoint far enough to prepare an article so that the ordinary teacher can get real help out of it." I am, therefore, proceeding on the understanding that my assignment is to write (1) an article dealing with the simpler facts and principles of manufacturing in the United States; and (2) an article expressly for the use of teachers in the schools

much work as by hand. By means of type and a great modern printing press, a few men can print a million books in less time than it would take to print one with pen and ink, as books were once made.

A fundamental requirement in modern manufacturing is *specially-designed machines* for each kind of work. The second thing is a *source of power* to drive the machines. Most machines are made of iron and steel, and the greater part of the power for manufacturing comes from coal, altho some comes from petroleum, and from falling water. So far as materials are concerned, modern manufacturing is based upon coal and steel, but a host of lesser things are also called into use.

THE FACTOR OF TRANSPORTATION COSTS

Coal and steel are heavy materials and it is costly to move them far. This is especially true of coal, which is used in vast quantities (600,000,000 tons a year in the United States). A second thing to understand, then, is that manufacturing on a large scale is done only where power—mainly coal—is reasonably cheap. Thus the great manufacturing centers of the world are clustered around or near coal-mining regions. If transportation by water, or otherwise, is cheap, or if the goods manufactured are expensive, then coal may be moved some distance, possibly hundreds of miles, to the factories.

The manufacturer assembles at the factory various kinds of material to be worked up into manufactured goods. This raw material, or partly finished material, of wood, metal, leather, rubber, cotton, or wool, must be transported to the factory. Here again distance counts. A manufacturing enterprise might easily fail if the cost of transporting materials to the factory was unduly high. Not only does the factory need to be near to coal or other power, but it also needs to be conveniently near to the principal raw materials that are to be used. There are, of course, exceptions to almost any rule. For example, the silk mills of New Jersey and Pennsylvania get most of their raw silk from Japan and China, ten thousand miles away. The light weight and great value of the silk make this possible. All of the cotton used in the cotton mills of Europe is transported a long distance.

A third element of cost arises from the necessity of transporting manufactured goods to the people who are to use them, that is,

to market. Naturally, each factory owner will aim to locate his factory in a section where there are many consumers of his particular products. Just as he aims to save on the transportation of coal and raw materials, so he aims to market the greater part of his products nearby. Usually this can be achieved only in part, and nearly all manufacturers send a part of their products long distances, perhaps half way around the world. The cheapness of ocean transport is very favorable to overseas shipments.

COMPETITION

It is important to keep in mind that there are many manufactureres engaged in making the same or similar goods, and that they are competitors of one another, each seeking to get the largest possible share of the business. In most lines of industry this competition is extremely keen. Manufacturers must seek to achieve every possible economy, to cut the cost of production, and to save on transportation. They must also make their products known thru advertising, and push their sale by means of salesmen. In many industries the marketing or selling costs equal the cost of manufacturing.

THE IMPORTANCE OF OUR GREAT HOME MARKET AND MASS PRODUCTION

Another large element in manufacturing in the United States is the great number of people who earn good wages and salaries, and are able to buy manufactured goods freely. These millions of people form our home market, which is protected by a high tariff. These conditions are favorable to mass production, which enables manufacturers to employ the most expensive and efficient machinery, and thus, by turning out articles with great rapidity and with minimum of hand labor, turns them out at low unit cost. These factors—our great home market and mass production—enable American manufacturers to make automobiles, locomotives, moving-picture films, agricultural machinery, and many other products more cheaply than almost any other country, and thus to develop a large export trade in certain manufactured goods. At present, over 40 per cent of the value of our exports consists of manufactures. In 1900 it was only 22 per cent. In spite of the fact that wages are much higher in the United States than in Europe, we are

able to sell many of our manufactures in foreign countries in successful competition with European goods. However, our home market is so much greater than our foreign market that we sell abroad only 10 per cent of the products that we manufacture and use 90 per cent in our own country.

THE PHENOMENAL GROWTH OF MANUFACTURING IN THE UNITED STATES

Only a comparatively few decades ago, the United States was thought of as an agricultural country, and such indeed was its main interest. In 1850, our mills and factories turned out 1 billion dollars' worth of manufactures: in 1880, 5 billions; in 1910, 20 billions, and in 1925 over 60 billions. This is a growth—within the memory of men still living—from 1 billion to 60 billions of dollars.[1] Great Britain, long the leader in manufacturing, now makes less than half the value of manufactures made in the United States. Taking into account the growth of both population and manufacturing, it may be pointed out that in 1850 the manufactures of the United States amounted to $41 for each inhabitant of the country; $100 in 1880, and to $540 at present, a truly astonishing growth, even when the rise in prices is taken into account. Such a phenomenal growth must have behind it some very substantial causes, and these we shall proceed to examine.

IMPORTANCE OF THE LOCATION AND SIZE OF THE UNITED STATES

It is well known that certain types of climate stimulate mental and physical activity, and that other types have a depressing effect. The most stimulating climate is that found in the temperate (or intermediate) zones, where the winters are quite cold, the weather variable, and the change of seasons strongly marked. Most of the United States, as well as most of Europe, lies in the milder part of the north temperate zone, and this advantage, coupled with many others, is believed to explain the love of activity, the pleasure in work, which the American people and many European peoples manifest. That the climate is an important factor seems to be evidenced by the greater energy shown by the

[1] The figures for these various years are not directly comparable because of the advance in prices

people who live in the cooler part of the United States as compared with those who live in the warmer part. The location of the United States is advantageous with respect to Europe, South America, and the Orient, three great present markets, and still greater future markets. In the past, Europe has enjoyed the most favored location possessed by any continent, but it is doubtful if that will continue to be true. At any rate, the location of the United States, climatically and commercially, is highly favorable.

The size of a country is a matter of fundamental significance. A large country is likely to possess large food-producing power, making possible a large population, which, in turn, gives military strength, and provides a great home market for national products. A large country is likely to possess rich and varied natural resources, which may move freely from any part of the country to any other part without tariff barriers or frontier delays. By reason of its large size, the United States includes within its boundaries the great coal fields of the East, the iron ores of the Lake Superior region, the petroleum of the Southwest, the copper of the West, the cotton of the South, the cereal and grazing lands of the North Central states, the forests of various sections, and the great industrial northeastern quarter of the country. Thus, within one nation is contained the widest variety of raw materials almost unlimited supplies of mechanical energy, and a great working and consuming population. Among the forty-eight states of the Union there is absolutely unhampered trade. Omitting Russia, Europe has between twenty-five and thirty independent countries within an area smaller than the United States. All movement of commodities among those European countries is subject to the different laws, tariffs, and restrictions which these countries see fit to impose. The United States is regarded as the greatest free-trade area in the world; that is, free trade among the forty-eight divisions that make up the Union. If there were the necessity for doing so, the United States could be nearly a self-contained and self-sufficient nation. At present, its foreign trade, great as it is, is only a small fraction of its internal trade. Clearly, the favorable location and the large size of the national area contribute greatly to the industrial strength of the United States.

THE EXCELLENT FACILITIES FOR COMMUNICATION AND TRANSPORTATION

It is self evident that manufacturing is closely dependent upon means of communication and transportation; communication by mail, telephone, telegraph, cable, radio; transportation by land, water, and air. Transportation on the Great Lakes—mainly iron ore, coal, and grain—is about the only inland water transportation in the United States that is large enough to affect appreciably the industrial life of the nation. Rivers and canals are too slow, and undependable to serve the needs of American manufacturing. Even on the Great Lakes there is very little movement of manufactured goods. It is the remarkable railway system—40 per cent of the mileage of the world—reaching every city and nearly every village; and operating summer and winter, that gives the United States the best transportation service possessed by any equal area in the world. Without this railway service, reaching to the mouth of the mine, and to the door of the manufacturing plant, the economic life of the nation could not be maintained. At the present time the railways of the country are carrying over 400 billion ton-miles of freight a year at an average cost of slightly over 1 cent per ton-mile. For shorter hauls the motor truck is supplementing the railway. It operates wherever there is a highway, and reaches not only the mouth of the mine and the door of the factory, but the door of any house, store, or shop. So highly organized are the facilities for communication and transportation that there is a special form of service for every possible need —wireless telegraph, long distance telephone, air mail, special delivery mail, express, fast freight, and many other forms of service. It is this marvelous system that enables modern manufacturing and other business to be conducted with such despatch and efficiency.

AMPLE SUPPLIES OF CAPITAL AND LABOR

Manufacturing on a vast scale requires, of course, a great number of workers and a huge investment of capital. As time goes on, more efficient and more costly machinery is installed, and the number of employees required decreases in proportion to the output of manufactured products. The manufacturing plants become larger and larger and the output per employee increases, because machines are doing more and more of the work. It may be

surprising that there are fewer manufacturing establishments in the United States today than there were sixty years ago. During that period the number of wage earners has increased only about 4 times (2 millions to 8½ millions), while the gross value of the output has increased 18 times, and the amount of capital invested has increased 35 times. Thus, capital invested in manufacturing has grown 8 or 9 times as fast as the number of employees. Again and again one reads that this or that manufacturer has installed a new machine that does the work with one operator formerly done by 10 or 20 employees. Such machines are costly, and are economical only when a very large output is desired, that is, when mass production is practicable. But machines can do only part of the work, and, at the best, a great number of workers must be employed. Mr. Ford, for example, was employing 115,000 persons in his Detroit plants in June, 1928.

The progress of manufacturing in the United States has depended in a no small measure upon human labor, skill, and energy. The steady streams of European immigrants have supplied a part of the great demand for labor, both skilled and unskilled. Seldom has there been a labor shortage in the various mills and factories. At present the United States is admitting annually only a third as many immigrants as were admitted before the World War. This tends to make wages higher, which, in turn, stimulates an increased invention and use of labor-saving machinery. Thus the present tendency is to increase capital investment much more rapidly than the labor force is increased. So great is the wealth of the 120 million people of the United States that there is ample money available to finance all meritorious undertakings. We now have a number of corporations whose capitalization exceeds a billion dollars each, and capital is looking for still further investments. So great is the surplus of capital that America is lending billions of dollars abroad.

Widespread Education and a Helpful Government

From the beginning of their national history the American people have placed much stress upon education—education for everyone. Technical and business training has been emphasized in schools and colleges, and the manufacturing industries have always had a supply of trained men to draw upon for every demand: engineers, chemists, electricians, metallurgists, machinists,

accountants, and many others. One has only to contrast the shortage of such practically-trained men in South America with the abundance in the United States to see how great an advantage this country enjoys in the upbuilding of manufacturing. Moreover, the government has actively assisted private industry in numberless ways; by establishing research and experimental centers; by disseminating information thru printed reports and bulletins; by exhaustive studies made by such bodies as the Federal Trade Commission, the Tariff Commission, the Bureau of Manufacturers, and the Bureau of Standards. During most of the period since the Civil War, we have had a protective tariff on imported manufactures. This has tended to exclude foreign manufactures and to leave the home market to American manufacturers. This protective policy is not approved by all, but the country seems to have prospered greatly under its operation. Some would say, it has prospered in spite of the tariff, but a greater number appear to believe that the protective tariff is beneficial.

CONCENTRATION OF MANUFACTURING IN THE NORTHEASTERN SECTION OF THE UNITED STATES

The shaded area shown in Fig. 1 includes about 12 per cent of the area of the United States, but within this small area about 65 per cent of the manufacturing of the country is done. In 1925, there were 13 cities in the United States that manufactured goods to the value of over a half-billion dollars each. These cities are:

	Total Value of Manufactures		*Total Value of Manufactures*
New York	$5,324,000,000	Buffalo	675,000,000
Chicago	3,439,000,000	Boston	586,000,000
Philadelphia	1,937,000,000	Akron	565,000,000
Detroit	1,599,000,000	Milwaukee	542,000,000
Cleveland	1,095,000,000	Los Angeles	532,000,000
St. Louis	875,000,000	Pittsburgh	519,000,000
Baltimore	679,000,000		

It will be noted that all but one (Los Angeles) of these 13 cities are within the shaded area shown in Fig. 1. (See Fig. 2.) Evidently this area possesses an important group of advantages for the location of manufacturing centers. The following are some of the outstanding advantages of this region:

1. It lies in the North and has the benefit of a stimulating climate.

2. It lies in the East and has had the advantage of an early start, of a very large population (market), abundant labor and capital, and most excellent railway facilities.

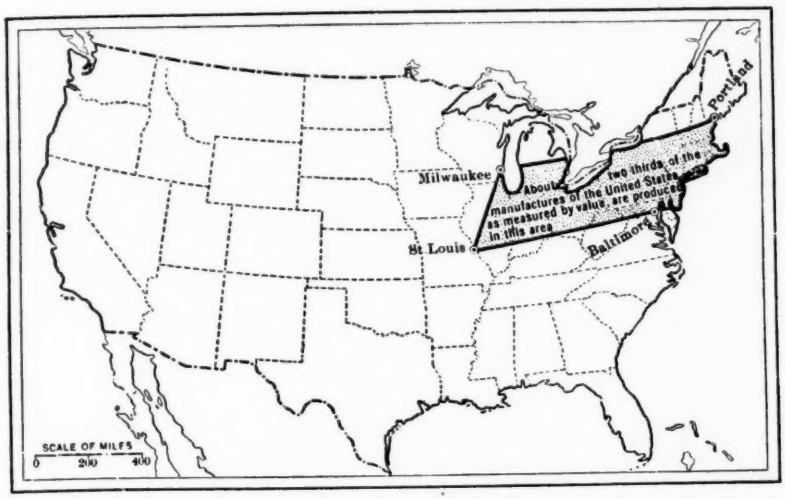
Portland
Milwaukee
About two thirds of the manufactures of the United States, as measured by value, are produced in this area
St Louis
Baltimore
SCALE OF MILES
0 200 400

FIG. 1. About 65 per cent of the manufacturing of the United States is done in the small shaded area shown on this map. See Figure 2.

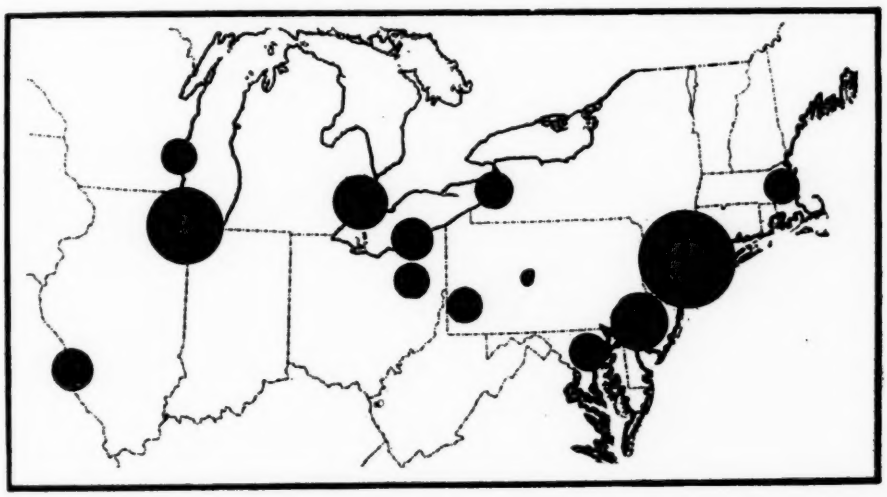

FIG. 2. Twelve of the thirteen largest manufacturing cities of the United States are in the shaded area in Figure 1.

3. It includes the most important coal fields, those of Pennsylvania, West Virginia, Ohio, Indiana, and Illinois. These states have also been large producers of petroleum and

natural gas and include important developed water powers.
4. It borders on the Great Lakes and thus gets cheaply the iron ores of the Lake Superior region, whence comes nearly 90 per cent of our output of iron ore.
5. It reaches into the heart of our agricultural belt and so has at hand large food resources and raw materials for such important industries as meat packing, the preparation of cereal foods, dairy products and vegetable canning.

In short, this section of the country has (1) invigorating climate, (2) a great working and consuming population, (3) vast stores of mechanical energy, (4) ready access to our chief source of iron ore, and (5) abundant food products and raw materials. It is one of the three greatest manufacturing regions of the world, the other two being England and Western Germany.

SPECIALIZATION IN PARTICULAR MANUFACTURES IN CERTAIN REGIONS

A mill or factory is usually located at a place that offers one or more conditions particularly favorable to the industry to which it is devoted. Commonly many mills devoted to the same or closely related industries grow up in especially advantageous localities. Very often the favorable conditions that first led to the locating of the mills cease to yield the original advantages, but the expensive plants can scarcely be moved or abandoned, and so their owners try to adjust themselves to changing conditions, and they frequently succeed. We therefore find mills located in places that would not now be selected. This is sometimes called the "Persistence of a rooted industry." Eastern New England formerly did most of the cotton manufacturing of the nation, because of an early start, abundant water power, and the concentration of skilled labor and experienced managers. But New England is far from the cotton fields; high taxes, high labor costs, and strict labor laws cut away profits; and now the southern[2] mills consume three times as much raw cotton as the New England mills. At present the New England cotton manufacturers are having a trying time.

For various reasons operating in the past, the woolen goods

[2]Mainly in the Piedmont region of North Carolina, South Carolina and Georgia, where a great deal of hydroelectric power is available and where labor conditions are favorable to the manufacturer

industry became concentrated in Massachusetts and eastern Pennsylvania; the shoe industry in the vicinity of Boston; leather tanning in Philadelphia and Milwaukee; and iron smelting and steel working in Pennsylvania. The advantages for these industries which these regions once enjoyed are now considerably diminished, but the great investments in the establishments make it virtually imperative to continue. Most of the early manufacturing industries located near the needed raw material, because such material is likely to be bulky and costly to transport. Many present industries are so located. For example, the preparation of milk products, fruit- and vegetable-canning, and other industries that use very perishable raw products, are best carried on near sources of raw material. The great meat packing centers (Chicago, Kansas City, Omaha, East St. Louis, St. Paul, St. Joseph, Indianapolis, Sioux City, and others) are in the Corn Belt, where most of the cattle and hogs are fattened. The two leading flour-milling cities (Minneapolis and Kansas City) are on the eastern edge of the wheat belt. Most of the wood-pulp and paper mills are in our northern states, along the Canadian border, near the northern forests, where glacial water powers are numerous. Cane sugar refineries are in leading port cities where imported raw sugar is received in ships. These and many other industries are located mainly with reference to securing raw materials.

Other industries are located primarily with reference to the markets where their products will be sold. For example, most kinds of machinery are manufactured near the places and regions that use them: textile and shoe machinery in New England; farm machinery in the Middle West; saw mill machinery in the region of the forests, etc., etc.

Most of our silk mills are located in the populous East—the chief market for silk goods—and in places where large numbers of women and girls, willing to work in mills, are found. Such places include the important coal-mining cities of eastern Pennsylvania, and the city of Paterson, New Jersey, which have large establishments employing foreign-born men in heavy industries. In this instance, silk manufacturing is referred to as a "parasitic industry," because, in a way, it lives upon other industries.

The great modern industry of making moving picture films is notably centered in Southern California, where clear, sunny weather prevails and where, if necessary, great out-of-door per-

formances can be staged without danger of rain. There is no other industry in which American producers so fully dominate the world-wide market as they do in the moving picture industry. There is scarcely a place in the civilized world where American films are not shown. Many foreign countries resent this dominance of the United States in the film industry and are enacting restrictive legislation with respect to the use of American films.

Certain manufacturing industries have grown to great magnitude in places that seemingly offer no specific advantage over many other places in the same general region. For example, Akron, Ohio, manufactures more than two-thirds of the rubber tires made in the entire United States, and the United States makes about two-thirds of all the rubber tires used in the world. About 83 per cent of the world's automobiles are used in this country. Detroit is the world's greatest automobile center. Yet, neither Akron nor Detroit originally offered any special advantages of location for the industries which now dominate them. A goodly number of industrial centers specialize in this or that industry mainly because some man of energy, foresight, or good luck started the industry there. The location was reasonably advantageous and the industry grew with the growth of the country and because of wise and energetic management.

The Ten Leading Manufacturing Industries of the United States, 1925

Motor vehicles, including bodies and parts and cycles	$4,720,000,000
Iron and steel, blast furnaces and rolling mills	3,713,000,000
Slaughtering and meat packing, wholesale	3,050,000,000
Clothing	2,381,000,000
Petroleum refining	2,377,000,000
Printing and publishing	2,270,000,000
Foundry and machine-shop products	2,233,000,000
Lumber and timber products	2,132,000,000
Cotton goods	1,820,000,000
Electrical machinery, apparatus, and supplies	1,333,000,000

Five other manufactured products exceed a billion dollars a year in value.

SUMMARY AND CONCLUSIONS

The leading position as a manufacturing nation held by the United States is made possible by a number of geographical and other advantages. Some of these are (1) the *large size* of the country, (2) its *great endowment* of agricultural, mineral, forest, and other wealth, (3) its *favorable location* in respect to climate

and ocean commerce, (4) its excellent facilities for *communication and transportation,* (5) the financial, mechanical, and industrial *aptitudes of its people,* who have (6) insisted upon universal *education* and *constructive governmental policies,* which (7) have given the country ample *labor, capital* and widespread *prosperity,* and the greatest *home market* in the world.

The chief manufacturing region of the United States lies between the Mississippi River and the Atlantic, and north of the Ohio and Potomac rivers, a region of great and varied and natural wealth, stimulating climate, early start, and consequent large population.

In a large measure, the great industrial centers are located where certain important advantages for the respective industries may be utilized, but other industries, such as rubber and automobiles seem to be fortuitously located. The widespread use of highly efficient machinery, and mass production enable American manufacturers in many lines to undersell foreign competitors in spite of high wages in this country. This is not true in all lines. Our exportation of manufactured products has increased enormously during the last decade, yet we export only 10 per cent of the goods that we manufacture.

SUGGESTIONS FOR WRITING GEOGRAPHIC PRINCIPLES

WALTER HANSEN

Oberlin College, Oberlin, Ohio

We note with interest the large number of Geography Departments in our institutions of higher learning that are offering courses which deal with "Principles of Geography." A few textbooks have been written under that title and a number of others stress geographic principles in some form. As one reviews the aims of these courses, either in the catalog of the various schools or in the introductory statements in the books themselves, he is led to wonder what part "principles" as such, really play in the course as presented to the class. It is very much worthwhile for the student to learn where the great centers of population are and why they are there, but such ideas will have a new meaning and will be less easily forgotten if stated in the

form of a generalized principle *by the student himself.* It is not enough that the instructor of such a course "be equipped with a thoro knowledge of the principles of her subject.[1] That of course is the first essential, but the student also should, after completing a course of this kind, be able to write out in a reasonably short time several principles dealing with any of the larger phases of the geography studied. This should especially apply in schools where a large percentage of the students are prospective teachers. In fact such students should demand that they be given a chance to experiment in this phase of geography which is rapidly coming to the front.

While geography has been variously defined, it seems that the majority of definitions stress the fact that geography deals with the relationships which exist between the physical environment and human activities. And, as defined by Professor Ridgley "A geographic principle is a fundamental truth concerning the relationships existing between man's activities and his natural environment."[2] This definition is somewhat restrictive in that it considers the direct term "in its direct application to human geography," but surely this is the phase of the subject which should receive emphasis in a course dealing with "principles of geography." By emphasizing this phase of geography we are enabled to stress its central theme and the teacher will not be confronted with the problem of discussing principles drawn from other fields. Principles which deal with the physical environment only or those dealing purely with human activities, without showing the relationship between the two, should rather be classed as physiographic or sociologic principles.

SOME PROBLEMS WHICH CONFRONT STUDENTS[3]

The student who enrolls in a course in "Principles of Geography" has perhaps had previous courses in the field of economics, sociology, or other sciences in which "principles" have been stressed. He may thus have learned that a principle is "a generalized statement of a fundamental truth," or some such statement. Such a definition is decidedly misleading when applied in the field

[1] G. T. Renner, "Some Principles of Commercial Geography." *Journal of Geography*, Vol. XXV, p. 342.

[2] Douglas G. Ridgley, "Geographic Principles." Page 2

[3] Most of the problems and examples presented in this paper have come to the attention of the author while teaching courses in "Principles of Geography" in Oberlin College, Oberlin, Ohio

of geography, for here we find that a principle is not simply a generalized statement concerning some geographic fact; but must show a relationship between the physical environment and a human response to that environment. Briefly, then, a geographic principle begins with some factor of the physical environment and shows that because of some characteristics of that environment, man in a general way makes a definite response. Unless the causal element is very evident, it may well be included in the statement of the principle. Thus the principle that "Advanced mature valleys make good sites for cities," may well include a causal phrase something as follows: "Becaused advanced mature valleys have fairly wide flood plains and afford extensive transportation possibilities they make good sites for cities." The causal element can thus be made to show the most important reason or reasons for the relationship, and the principle has the added advantage of being clearly understood by both the writer and anyone who may read it.

By including the causal element in the statement of a principle the writer may also more easily avoid writing the type of statement which is probably most easily confused with a real principle. This type may be described as being "undivided," or "undistributed."[4] Such statements may be illustrated by the following: "The climate affects the activities of the people." While this statement is quite true and may in a sense represent a generalized statement concerning the affect of climate upon man it nevertheless is so indefinite, both as to physical factor and human response, that it gives the reader practically no information and shows no relationship. It obviously does not say what kind of climate affects people, nor in what way it affects their activities. The statement does suggest that climate is so important a factor in the lives of people as to cause their activities to vary with certain characteristics of that climate. This variation may be stated in the form of a principle as follows: "Because climatic energy stimulates the individual to greater activity, other conditions being equal, the more progessive people of the world are found in regions of high climatic energy." We thus have a definite physical factor, the climatic energy of a given area, and a definite human response to that factor in the form of the progressiveness of the people. By

[4] These two terms are suggested by Professor G. D. Hubbard of Oberlin College. Other terms which may be employed to describe these kinds of statements include: "indefinite," "loose," "neutral," "negative," "indiscriminate," etc.

"progressiveness" we refer to advancements along various lines, which tend always toward a higher plane of living.

An interesting phase of this subject which seems to confuse the student is the fact that some geographic principles, which have universal application, may often be subdivided into several more localized principles which apply to specific regions or conditions. This may be illustrated by the principle quoted above, "Because clmatic energy stimulates the individual to greater activity, other conditions being equal, the more progressive people of the world are found in regions of high climatic energy." This may be subdivided into four more localized principles as follows:

1. "People living in jungles tend to be unprogressive because the continuously warm and rainy climate is decidedly enervating."
2. "The monotonously hot and dry climate of trade wind deserts hinders the progressiveness of the people of such regions."
3. "The great variability of climate which occurs in various sections of the middle latitudes is an important factor in accounting for the progressiveness of the people."
4. "People living in the tundras tend to be unprogressive largely because the climate there is so severe."

It is to be noted that here we deal with the physical factor, climate, and suggest a human response in the form of the progressiveness of the people. The first deals with the world in general while the other four deal with more restricted areas.

The fact that geographic principles may be very general or somewhat local in nature leads to other serious difficulties. For a principle may become so general in nature as to fall short on the point of being "fundamentally true" and it may also become so local in nature as to simply be a specific example of a general principle. The first point may be illustrated by the statement, "Rivers centralize human activities." Such a statement immediately suggests the Nile River in Africa or the Yangtze River in Asia. Yet a careful study of these two continents reveals the fact that there are scores of rivers which do not concentrate the population, in fact the opposite is quite often the case. The population of the southern part of Africa is "centralized" on the uplands rather than along the rivers. The same may be said of various parts of equatorial Africa. And there are many rivers of northern Asia which certainly are not at present centers of population. Perhaps

one may concede that this statement is, on the whole, say 50 per cent true. In order that a statement be accepted as a principle it should certainly be more than 50 per cent true. With this as a working basis let us proceed to so express this particular idea that its percentage of truth will be very materially increased. Now what rivers of the world have attracted people? A study of "Density of Population" maps reveals the fact that rivers of the middle latitudes seem to concentrate human populations to a greater extent than do those of lower or higher latitudes. There are some exceptions even in the middle latitudes, and this is largely explained by the fact that some rivers are not navigable and therefore do not, except in special cases, tend to centralize human activities, and as a result lead to an increase in the density of population. With these two facts in mind we may express our principle as follows: "Since navigable rivers in middle latitudes serve as trade arteries, they tend to centralize human activities." While there are still some exceptions to this general principle we have at least limited it to the extent that the principle is possibly 80 per cent or 90 per cent true as compared with 50 per cent to begin with. An illustration of a statement which is merely an example of a general principle may be stated as follows: "The annual flood of the Nile River is a real benefit to man in that silt deposited on the flood plain increases the crop yield." This statement may readily be changed to a general principle by saying that, "Due to the plant food elements deposited, man is able to increase the crop production along rivers which annually flood their valleys." We thus have the general principle which the former statement illustrates.

Principles may also be written in such a way as to show that because of certain human activities the physical environment has been modified. Thus the statement that: "Deforestation leads to the destruction of the soil and by this means man has lost much valuable land," rather reverses the more general form. The idea involved may also be expressed in the usual form by saying, "Since man has found that forests help to prevent erosion he is (in many places where serious erosion has taken place) adopting a policy of afforestation." We thus have man making a definite response to a given physical condition, rather than showing a physical response to a human activity.

These examples of difficulties met in the writing of geographic

principles indicate that the student must not only clearly understand how the physical environment affects human activities and how man may modify the physical environment, but he must be able to state these relationships in such a way that the principle will not be easily misunderstood or misinterpreted. This necessarily takes practice. On the whole however, it is a phase of geography which students and teachers alike find intensely interesting and worthwhile. And with a few weeks of practice the student finds himself, consciously and unconsciously, selecting as he reads, those statements and ideas which are readily reworded into acceptable principles. In this way he will not be reading merely so many facts, as such, but he will see the underlying principles involved, which is the supreme achievement in the field of geography.

As a final suggestion we submit the following "tests," all of which should be met by any geographic principle.

1. Is the principle properly "*divided*" and "*distributed?*"
2. Does it deal with a *physical factor?*
3. Is there a definite *human response* to this physical factor? (Or has the environmental situation been modified by man's activities?)
4. Is the *causal element* expressed?
5. As stated, is it in a large majority of cases (say 80 per cent or 90 per cent) true or characteristic of the area or conditions under consideration?

BETTER METHOD IN GEOGRAPHY*

(4th and 5th Grades)

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SUGGESTED LESSON PLAN

I. Review Period: Review work of previous lessons, reports, discussions, etc., with a view to tying up the known to the related unknown.

II. Assignment Period: Awaken interest by telling what you are going to teach.

* This plan has stood the test of daily use for the past three and a half years in a New York City Public School, and has proved to principals and teachers that geography can be made a subject which children understand and enjoy.

III. Socialized Recitation Period: Hear reports. Stimulate and direct class discussion. Develop problems to be solved during the study period. Put emphasis on *LIFE* when possible, in these problems. Place on the blackboard the problems and any other important topics that are brought out and organized during the class discussions. Make use of the principle of "multiple" sense appeal by having these problems and topics copied in pupils' note books for reference in the Summary Period, and also in Review Period at the beginning of the next lesson.

IV. Supervised Directed Study Period: Study habits are taught and the study habit gradually formed. Difficulties are discovered and removed during the solving of the prolems developed during the Socialized Recitation Period.

V. Laboratory Period: Train in the ability to work alone and to know where and how to find facts. This will be of great value to pupils all thru their lives.

VI. Test Period: Give oral and written tests (varying word-answer, true-false, multiple-choice, etc.) to find out whether or not the main points of the lesson have been mastered. Drill on any fact not firmly fixed.

VII. Summary Period: Carry over from the Review Period adding new points taught. This makes for a homogeneous development resulting in the fixation of the subject matter.

The social impulse is so strong in children that it only needs the skillful direction of the teacher to arouse in them a tremendous vital interest concerning the habits and customs of the people of the world who live in other countries than their own.

In modern geography in these grades we are not so much interested in the physical features of the earth as we are in awakening interest in the study of human, plant, and animal life and how it is affected by climate, by making it clear how the children in our own homes live, and then visiting imaginatively other children who live in homes all around the world, and in finding out how they live and play. In this way a clear concept can be formed as to how people the world over live, work and play.

Our *AIM* is to have our own children learn to know and love and understand the children and then the adult people of other

countries, so that they will not be influenced by prejudice against other races or religions.

We know the continents thru the *PRODUCTS* that they send to us. It will then follow that the important activities of people such as *TRADE, COMMERCE, COMMUNICATION,* and *TRANSPORTATION* make the inter-relations among people and are greatly influenced by the earth's physical features. In other words teach *TRANSPORTATION* by asking *How does the world ride? How do the people in this region ride?*

Children must be taught to see that we are growing more to be a family of nations who depend more and more upon each other, so that thru the exchange of products all people will be able to enjoy the good things that grow in some parts of the world and not in others. Therefore we must be citizens not only of our city, state, and country, but of the world.

The studies of our home life are used constantly as a basis for comparison and contrast in studying the conditions of life—the play of the children and the work of the people the world around. The World is always the unit of thought.

GENERAL OUTLINE

For the Study of a Continent, the Regions of a Continent, or a Country

Approach: Always use the children's experience as a starting point, beginning with the home and returning to the home region after studying other parts of the world.

What continent have we studied?

Were they important in world trade?

Were they located in positions of great importance for world trade and travel?

I. *Introductory Location and Contacts*

Let us locate (use world map) this continent (or country) on this map.

What race of people do we find living here? What language do they speak? Do we trade with them? Is the location favorable or unfavorable for world trade?

In this new work tie up with our home life the lives of the people to be studied, showing how their lives touch our lives thru world trade by sending us some Tie of Vital Relationship in meet-

ing some one of our needs which we do not produce. We trade with them by means of commerce and transportation. These two do most to build up friendly relations between the family of nations.

Our lives and comforts depend a great deal upon the way people of other lands live. Bring the personal touch into every lesson. Take an imaginary journey to visit the new country and see how the children play and the people work.

Always introduce the place that your children are to visit imaginatively by showing pictures and have them as large and clear as possible. Proceed from the pictures to the maps and then to the text and reference books, going back to the pictures again and again. Let the children make a list of statements and questions as

"I did not know that————"

"I wonder why————"

The picture makes me see that the play of the children and the work of the people is not like ours, so what more would I like to learn about their lives?

Let us visit these people who live here and see if we should like to live as they do.

II. *Density and Distribution of Population*

We are going to study the life of the people who live here to see how they live, work, and play.

Do people live here?

Are they evenly or unevenly scattered?

Let us find on our maps, if we can, why so many people live in certain parts and so few in other parts.

Are the people in the United States evenly scattered?

Why not?

In this way children will be led to discover that the distribution of people in a country depends on life conditions—climate, water resources, soil, and surface.

Why is it important that we should know about these people?

What do their lives have to do with our lives?

It is important because we trade with them and our lives depend a great deal on what the different people around the world can send to us to make us comfortable and happy.

III. *Climatic Condition*

Does the Rainfall and Temperature map help us find out why people are unevenly scattered?

Let us see in what kind of homes these people live. That will tell us a great deal about the climate and how much rainfall they have. Is it desert rainfall or sparse rainfall or abundant rainfall, or do they have excessive rainfall?

The amount of rainfall and the water supply of a place have a great deal to do with the way people live there. It also helps to decide whether a great many or only a few people are likely to live there.

We find that most of the people of the world live where there is abundant rainfall and good water supply.

The homes and the clothes that these people wear tell us in which zone the region lies. Is it too hot or too cold to give the people health and energy to do good work? It is what people *DO* that makes a place important. Most people in the world live on the plains of the temperate zones, because that zone gives people health and energy to do good work, it is easier to raise food, and transportation is much easier in valleys of the plains.

Lead the pupils to see that the changing length of day and night and the change of seasons has much to do with the children's games, food, clothing and shelter, and with the work the people do.

In the cold desert of Eskimo land the mode of life depends entirely on the long day or the long night and the severe cold.

In the hot, dry desert the lives of the people are influenced greatly by the great heat of the desert and the lack of water for plants to grow to supply food for people and animals.

In the study of any place always let the pupils determine from the world map in their open textbooks whether a place is near or far away from the equator. Are they nearer to it or farther away from it than we are where we live? The distance from the equator helps greatly to decide how people and their children will play, work and live. Let us find what can be grown there. If a place is too hot or damp how does it affect the daily lives of the people? Let us find out if there is any solution for such difficulties by transportation or sanitation in order that that part of the world may be made a better place for people to live. Are there any difficulties that cannot be solved such as low lands, hot, damp lands, or insects that make it a hard place for people to live and work?

How have similar difficulties been overcome in countries that we know about?

IV. *Agriculture*

Would we like to play the games these children play? Lead the pupils to solve life problems. Let us see what work these people do. We will look at the economic map and see if it helps us to solve what work these people do and why they do that work. Will it help us to solve why people are so unevenly scattered? We will find out how the people are fed, clothed, and sheltered.

What work do the people here do to make a living?
What kind of transportation have they?

Agriculture is the greatest occupation in the world because people must be fed and clothed. Plants are the actual source of food for all. The work people do makes a place important and what they do is largely influenced by life conditions.

What must these people buy? Do we send them any of these things?
What have they to sell? Do they send us any of those things?
What useful relations do they have with us and with other nations? In what way are the people like us?
In what way are they different?
Do they eat the same kind of food that we do?
Do they wear the same kind of clothing?
Are their homes like ours?
Would they be comfortable where they live in the kind of homes and clothing that we wear? (Always expect pupils to tell *WHY*.)
Do these people produce more of any of the things that they need than they can use themselves, and in this way are they of great importance to the world by being able to send raw or fine material to other parts of the world where they are needed?
Do they send any of these products to us?
To what people in the world do they send these products?
Do they produce any of the things that we produce in greater quantities than we need in our own country?
Why cannot they grow everything that they want where they live? How do they contribute to our needs and

pleasures and in this way help to make our country a better place in which to live?

How in turn do we help to make their country a better place for them to live in?

What would happen if they raised more of some products than they needed and had no means of transportation?

Are they able to raise or get from other countries rubber, sugar, or cotton?

Can they get coffee, tea, cacao, and copra from other places?

In teaching important products such as cotton, sugar, rubber, oil, show pupils on a world map where they are produced in great quantities in other parts of the world.

Thus people raise more than they need for themselves and so can send some of it to other parts of the world where it is not produced, in this way giving the people in different parts of the world what they need and cannot always raise in their own particular region.

V. *Density and Kind of Vegetation*

Does the Vegetation map help us to see why so many people live in certain parts of the world and so few in others? We can discover what grows, without being planted, in some parts of the world and pupils can see that is the result of the rainfall and temperature that they studied.

What plants and animals are found here?

Are the animals serviceable to the people or are they dangerous?

Let us see what gifts Nature has provided in this part of the world without the help of people.

Are there any "Frozen Deserts"?

In the frozen deserts of the northlands the desert dwellers must spend most of their time in just getting the food, clothing, and shelter that they actually need for existence. They are too inaccessible to have things sent to them from other parts of the world, while people living near the equator need to do very little work for the actual necessities of life. The life of a person living on a hot desert is most difficult. The people must keep roaming to find food and water for themselves and their flocks. There is also great danger of getting lost in sand storms, or from thieves who wander in the desert.

Does the climate here together with the aid of the soil and water resources help to make a good growing season?

Temperature and rainfall have a great effect on the distribution of plant and animal life on our earth. Contrast and compare the lives of the people of the hot and cold deserts with the lives of the people who live in the plains and in the mountains.

Which type of dwellers are we?

VI. *Topography*

Study the relief map: What is the character of the surface of this region?

Where do we find the valleys, where the "Plain Dwellers" live?

Most great cities are in the plains and generally where there is a break in transportation thus giving so much work to be done. Nine-tenths of the people of the world live in plains where it is easier to raise and transport food, raw material, and people.

What are the gifts of the mountains of this region?
What animals are used to help in transportation in these mountains or across deserts?
Are there great rivers that are used for transportation?
Campare and contrast transportation by water, air, land.
What are the advantages of water transportation?
Are the rivers connected with the oceans by canals?
What cities do we find here?

Cities are great because of their location. Teach reasons that lead to their being great cities. Are they sea, river, or lake, or air ports?

Does this region give the people coal, iron, or oil?
Have they falling water with which to manufacture?
Do they produce finished materials by utilizing the energy of falling water?

"The energy of falling water is at present revolutionizing the world's power production." To be a great country a region must be able to get coal and iron, or oil, or have falling water. Then there must be skilled workers to turn the raw material into finished products.

Attacking geography from this point of view insures vital interest and thoro assimilation by pupils of the intermediate grades.

PRACTICE EXERCISES IN THE TEACHING OF GEOGRAPHY

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The exercises discussed in this paper were originally constructed as practice exercises. Let us suppose the class is studying the causes of the change of seasons. The explanation is taken up in the class with the use of the globe and the necessary diagrams. The class is then asked to study the exposition in the text and returns the next day supposedly having mastered the material. Often the ordinary period would be given over to a recitation or a written quizz for the purpose of testing the degree of mastery of the problem. The writer felt that he could not rely on either of these methods because he was under something of a handicap in that all of his work must be accomplished with a very minimum of "homework" in four thirty-minute periods per week during an eight months school year. There was need for every economy. Therefore, a mimeographed practice exercise was prepared for the problem which was being studied. It was constructed after the manner of the new type examination (with true-false, multiple choice, completion, and matching questions) from a list of items which appeared to constitute the principal items to be learned. When it was given to the pupil, he was instructed that it was given to him in order that he might check up on his information regarding the causes of the seasons. He was to indicate the correct answers. He was told to do it as quickly as he could, still being careful to be correct. He was also told that the answers were on the second page of the exercise, and that he would not be marked upon the number of items he could answer correctly because this was to be a practice exercise; he would, therefore, be benefitted most by attempting everything on the exercise before he looked at the answers. He was made to feel that this was a straight forward, bona fide offer to assist him in this specific task. The exercise done, the pupils were given an opportunity to have difficult questions explained. The items missed constituted the next study assignment. Then the class was ready for a final written test, or ready to pass on to the next unit of the group of problems being studied. In this sense, the exercises were clearly practice exercises. A sec-

ond use—that of study exercises—was indicated by the success of such exercises used by Dr. Reeder.*

Value of Study Exercise Substantiated by Research

All of the exercises were based on the text which was the foundation of our syllabus. A different use was made of them in this case. Instead of giving out the exercises after the assignment had been studied, the exercise, minus the answers, was distributed when the assignment in the text was made. The pupils were to indicate the correct answers with the use of the text as a part of the work of studying the lesson, preferably after the text had been read once. Such exercises are defensible because Dr. Reeder's results indicated a greater degree of mastery (in a controlled experiment) for pupils who used study exercises as against those who did not use them. Certainly such exercises constitute one form of supervised study.

An Efficient Instrument of Review

A third us to which these exercises have been put successfully is in the matter of review. Our advanced class must be prepared to take a final examination in geography preparatory to leaving the field for other studies in boarding school. The question arises: What shall we review? In this case, let us assume the boys are reviewing South America. We have four practice exercises on that continent—four because our syllabus makes that division. The boys readily saw the futility of rehashing what they knew and were glad to agree to "take" these four exercises, score them by the answers given, and make a return of what they had missed. Since these exercises were not marked for grades, and since the value to the boys was evident—to pass over that which was known in order to study that which had been forgotten—there was no motive for dishonesty. As it was to have been expected, some items were not missed at all, some very often, and some indifferently. The major points of emphasis for review were clearly indicated. By this diagnosis we were able to "test, teach, and test again"—that is, we were able to teach economically. It is intended, hereafter, to use this same method of diagnosis when we are introducing a subject for the first time.

* Edwin Hewett Reeder, Method of Directing Children's Study of Geography. Teachers College, New York, 1925.

To those who will be concerned with map locations, I should state that we depended largely upon classroom work and the use of outline maps for practice in this phase of the work because written exercises such as we used do not lend themselves to map location work.

RELATION OF PRACTICE EXERCISES TO INDIVIDUAL DIFFERENCES

I have indicated that there is a final comprehensive examination (both essay and new type) given at the completion of each unit of study. Plainly, if it is desired that a pupil shall be allowed to cover the work at his own rate of speed, the use of the practice exercise and final examination mentioned here lend themselves to such a scheme with ease. They can thus be a very material aid in taking individual differences into account.

The inherent danger in such exercises is that they will mean an inflexible course of study—it is easier to use the old exercises than to write new ones—but such an outcome is not inevitable. The danger may be overcome in more than one way. Since most courses in geography (or any other subject for that matter) are based primarily upon a given textbook, such exercises could be prepared in advance and sold as a part of the text. Lacking this, the precedent described in this paper is possible where there is a mimeograph available. In either case, the exercises (and the course of study) would change with each new text. Where there is a bureau of research connected with the schools, the task of preparing such exercises will fall into its province, and changes in the course of study would occur as the curriculum research progressed.

SUGGESTIONS FOR CONSTRUCTING PRACTICE EXERCISES

A word concerning the construction of the exercises is not out of place for those who would construct their own. It is impossible within the limits of this paper to go into the rules governing the construction of new type tests. They are numerous, extended, and important. The best collection of such rules known to the author is in Chap. III (Methods of Improving Examinations) in "Measurement in Secondary Education," P. M. Symonds (Macmillan, 1927). One warning I should like to voice. The practice exercise has large value as a learning device. It emphasizes the things to be learned. Too often, especially in matching tests or on map locations, a pupil is asked to write a number (attached to the cor-

rect answer) where that answer belongs. In a practice exercise every effort should be made to connect up that which is to be learned, e.g., that New York City is at the mouth of the Hudson River, and not that there is a 14 or 23, or whatever else you will, there.

Answers with the page references should be available to the pupils but separated from the exercises so that these latter will lend themselves to the uses previously described.

Finally, it should be noted that the primary use of these exercises is for study. They will be used properly by the pupils so long as the pupils know that there is no "catch" in them. Once the pupils are marked on the number of items they answer correctly when the answers are available, one may as well throw the exercises out the window for nothing will be accomplished other than the very immoral art of deception since the answers will be copied. This is not a danger when pupils are dealt with in frankness. If pupils must be graded before the achievement on the final test is known, let them know they are being marked on the degree of application they show toward overcoming the difficulties which they have discovered thru the practice exercise.

TEMPERATE SOUTH AMERICA

A Practical Exercise

1. The four countries which are included in Temperate South America are: (underline the correct countries)

Brazil	Chile	Colombia
Argentine	Paraguay	Uruguay

2. The four leading cities of South America are:

a— b— c— d—

3. Argentina is the "shoe-string republic." (TRUE-FALSE)
4. Chile is similar to our Pacific Coast States in the following respects:

a— d—
b— e—
c—

5. Grapes, common cereals (grains), garden vegetables, and apples are the chief products of Chile. (TRUE-FALSE)
6. Chile has but one seaport of importance,.....
7. Chile has a climate favorable for hard work but most of the people are unenergetic mestizos, or natives. (TRUE-FALSE)
8. Chile's chief mineral resource is.....from which.....is obtained for fertilizer.
9. This mineral is found in the (northern, southern) part of Chile.
10. Argentina and Uruguay are similar to the United States in the following ways: (choose four)

a—eastern highlands
b—same temperature belts
c—well educated people
d—central plains
e—rainfall
f—a great central river system

11. The heaviest rainfall occurs just east of the Andes. (TRUE-FALSE)
12. Llanos, selvas, campos, and pampas are (fruit, animals, plains).
13. Argentina raises much corn and wheat. (TRUE-FALSE)
14. Argentina, only one-third as large as the United States, raises (half as many, more) cattle and (more, less, nearly as many) sheep as we do.
15. The Plata-Parana River Basin is similar to the.....River Basin in the United States both in size and transportation done on it.
16. Rosario is a center for (textiles, mining, stock and grain).
17. Nearly one-fourth of the population of Uruguay lives in the city of Montevideo. (TRUE-FALSE)
18. There are (fewer, more) miles of railroad in Temperate South America than in Tropical South America.
19. Argentine exports are chiefly (foods, minerals, manufactured goods).
20. Argentina has no forests of note. (TRUE-FALSE)
21. In the future our relations with these countries are likely to be on the basis of: (choose one)

    a—Friendly, needing and buying each other's goods

    or

    b—Competing to sell similar goods in the same markets.

22. The Pan-American Union is a kind of Western Continent League of Nations. (TRUE-FALSE)
23. In general, there are many more (educated, uneducated) people in this section of South America than in the United States.

ANSWERS TO THE PRACTICE EXERCISE

1. Argentine, Chile, Paraguay, Uruguay. pp. 266, 247
2. Buenos Aires, Santiago, Montevideo, Rio de Janiero. pp. 266, 256, 245
3. False. p. 266
4. low coastal mountains
   narrow fertile valley
   border of high mountains on the east
   climate—least rainfall near the equator
   agricultural products p. 267
5. True. p. 267
6. Valparaiso. pp. 267, 269
7. False. p. 268
8. nitrate of soda, nitrate p. 270
9. northern. p. 270
10. same temperature belts, central plains, rainfall, a great central river basin. pp. 270-273
11. False. p. 271
12. plains. pp. 272, 246
13. True. p. 272
14. half as many, nearly as many. p. 273
15. Mississippi. p. 273

16. stock and grain. p. 273-4
17. True. pp. 274, 245
18. more. p. 274
19. food. p. 274
20. False. p. 275
21. a. p. 276
22. True. p. 277
23. uneducated. p. 271

GENERAL GEOGRAPHY

Latitude, Longitude, and Standard Time

Practice Exercise

1. Latitude and longitude are the names of devices by which places on the earth (and on maps) can be ..... exactly.
2. Latitude is distance north and south of the ..... measured in degrees.
3. The distance in degrees from pole to pole is ....., while the circumference of the earth, in degrees, thru the poles is .....
4. Lines measuring latitude extend (north and south, east and west); they are called .....
5. Lines measuring longitude extend (north and south, east and west); they are called .....
6. By agreement, most countries place the principal, or prime, meridian as that one which passes thru .....
7. The meridians are everywhere about 69° apart. (TRUE-FALSE)
8. There are actual marks on the earth to indicate the lines of latitude and longitude. (TRUE-FALSE)
9. The names of the five standard time belts are:

   a— b—
   c— d—
   e—

10. Sun time is the most correct time. (TRUE-FALSE)
11. Standard time (was, was not) established to overcome the inconvenience of local times to travellers.
12. The standard time belts are about ..... degrees apart because the sun passes directly over that many in .....
13. New York City has (Atlantic, Eastern, Central) Standard Time.
14. The time belt boundaries fall exactly on the meridians. (TRUE-FALSE)
15. Travelling toward the east, one sets his watch (ahead, back).
16. Daylight saving time sets the hour (forward, backward).
17. Daylight saving aids the conservation of fuel. (TRUE-FALSE)
18. From Fig. 32 (p. 39) in your book, find the latitude and longitude of New York City.

ANSWERS

Latitude, Longitude, and Standard Time

Page references refer to your text

1. located p. 228
2. equator p. 229
3. 180, 360 p. 228
4. east and west, parallels p. 229
5. north and south, meridians p. 229
6. Greenwich, England p. 229

7. FALSE p. 229
8. FALSE p. 229
9. Atlantic, Eastern, Central, Mountain, Pacific. p. 215
10. TRUE (because the sun on the meridian shines directly over a relatively small area). p. 230
11. was p. 230
12. 15, one hour p. 231
13. Eastern p. 215
14. FALSE p. 231
15. ahead p. 231
16. forward p. 231
17. TRUE p. 231
18. 40.5 degrees North Latitude and 76 degrees West Longitude.

ITALY AND THE ADRIATIC

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The post war controversy between Italy and Jugoslavia over the possession of the Dalmatian coast is but the latest chapter in the story of an age long struggle for the control of the Adriatic. Indeed the scattered colonies along that coast which today maintain their Italian character are but the outpost remnants of the thirteenth century when the Adriatic was a "Venetian lake."

ITALY'S DILEMMA IN 1915

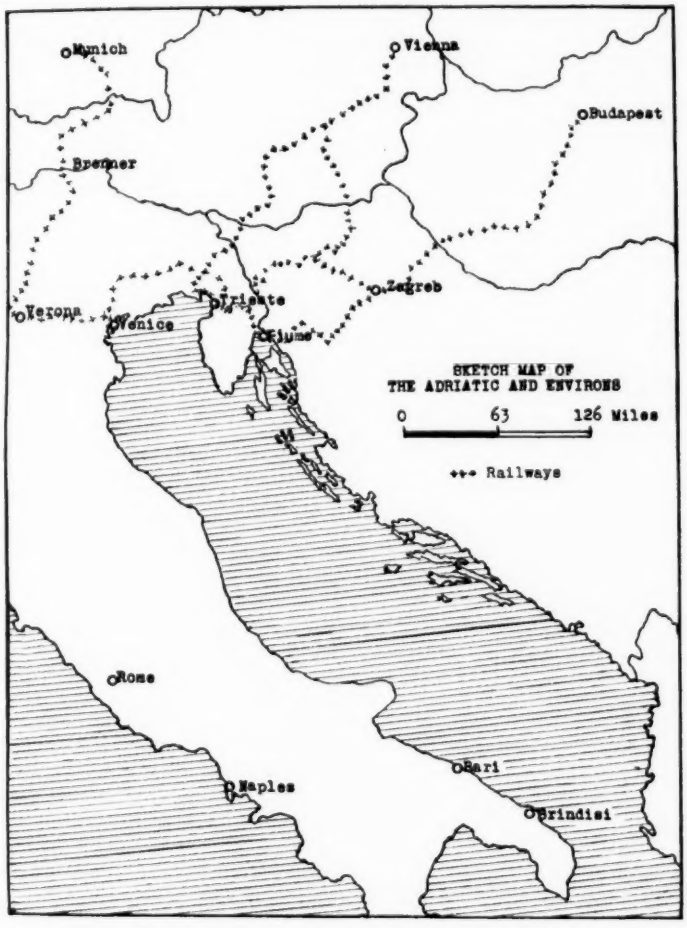
To neutral Italy in 1915 the stage appeared set in a fashion most menacing. Should the Central Powers win, it meant Austrian (Teutonic) domination of the eastern Adriatic; victory for the Allies spelled opportunity for the united Slav nation (possibly backed by Russia) to assume control there. Neither possibility could be viewed with equanimity. The alternative was to enter the war, thus insuring it a voice at the peace conference where it might prevent the threatened calamity. As the price of its aid it was able to further obtain from the principal allies a guarantee of their support for the satisfaction of its principal territorial claims north and east of the Adriatic.[1]

ITALY VS. JUGOSLAVIA

With the war won, a new Slavic nation was born in the Balkans to dispute with Italy the possession of the Adriatic coast lands. Italy now claimed on the basis of racial as well as military grounds

[1] See secret Treaty of London, 1915

not only the territory originally promised but the city and district of Fiume as well. The city proper was largely Italian and formed therefore a part of Italia Irridentia. Jugoslavia claimed Fiume as being its only practicable outlet to the sea. A compromise treaty in 1920[2] gave it an international status, but finally four years later the city was divided. Fiume proper, dominantly Italian, be-



came a part of Italy, while Susak, the Slavic industrial suburb, was given to Jugoslavia. The latter was also given a fifty year lease of the Thaon de Revel basin of Trieste harbor, thus insuring ample accommodations for any traffic likely to develop. The importance of this outlet for Jugoslavia is hard to overestimate since the most populous and productive portion of that country is in the north forming a natural hinterland for the port.

[2] See Treaty of Rapallo, 1920

GEOGRAPHICAL SETTING OF THE ADRIATIC

The great importance of the Adriatic is largely founded upon its geographical character. It shows on the map as an arm of the sea thrust deep into central Europe, and appears the natural route for much of the traffic between that region and the Mediterranean and the Near East. Venice, at the head of the sea, in its heyday easily controlled the medieval trade with Central Europe via the Brenner, gaining both fame and wealth as the middleman in that traffic.

However, those were the days of small ships, of sails and wood rather than coal and iron, and of cargoes of silks and spices rather than of grain and lumber. With the interruption of this trade by the Turks and the discovery of the Cape Route, the entrepot trade shifted to northwestern Europe thus avoiding the necessity of Alpine transit. The industrial revolution, based upon coal and iron, seems to have fixed definitely the economic center of gravity of the continent in northwestern Europe, and the cheapness of ocean carriage in huge coal-driven freighters has made the all-water route via Gibraltar far cheaper than the shorter one over the Alps. Even Suez and the Alpine tunnels have failed to restore the old prestige of Venice and the Adriatic.

After all it must be remembered that unlike either the Baltic or the Black, the Adriatic is blocked in by a mountain wall which makes access to the hinterland difficult. True, the plains of the Po open out onto it in the northwest, but the coast is fringed with lagoons and shallows. Genoa, in spite of the barrier of the Ligurian Alps, has a much larger trade than Venice.

TRIESTE AND FIUME

The other two newly acquired commercial outlets on the Adriatic, Trieste and Fiume, were the ocean ports of Austria and Hungary respectively. Both have harbors largely artificial and their development is in the main the result of active support from Vienna and Budapest. Their location where the mountain rim is narrowest gave them a considerable hinterland including eastern Switzerland, southern Germany and Austria Hungary all of which regions found in these ports an outlet for part of their Mediterranean trade, especially that with the Near East. Trieste, before the war, was one of the largest ports of the Mediterranean possessing in its deep water free from the ever-clogging silt an immense

advantage over Venice. It possessed far better facilities than Fiume, tho the rapid growth of the latter (2¼ million tons in 1913) has made of it a serious rival. Two thirds of Trieste's prewar trade was with Austria while the proportion of Fiume's traffic accounted for by Hungary was even larger. However, for both countries, in spite of strong political pressure, the bulk of their ocean trade moved to the seaboard via other routes,[3] especially across Germany. Tho the governments did much in the way of tariff manipulation and the improvement of transportation routes, the influence of the natural features persist. The principal railroad from Fiume to Budapest via Zagreb has an especially difficult approach. Within the first twenty miles from the coast it climbs 2,795 feet over the Karst Hills, a gradient making necessary the use of special locomotives for heavy traffic. The actual length of the line from Fiume to Zagreb is about 142 miles, while the air line distance is only about 80.

STRATEGIC CONSIDERATIONS

Italy's concern, from a strategic standpoint, regarding the ownership of the eastern shoreline of the Adriatic is largely explained by the contrast in the physical character of the two coasts. The east coast is marked by innumerable irregularities, bays, gulfs and islands, especially southward from Fiume. The water is almost everywhere deep enough for any ship. On the west coast, on the other hand, the shore is markedly regular. Brundisi is the only break and it is of little economic consequence. From the "hip to the heel" the Italian boot has an open coast with shallow water and little shelter.[4]

Tho the Italian coast is difficult for ships to approach, the access to its hinterland as indicated above is considerably better than on the east shore. For the latter, abrupt escarpments and mountain ranges parallel to the coast, shut off the interior and restrict the hinterland to a narrow coastal plain. But three narrow gauge

[3] In 1913 only 7.3 per cent of Hungary's foreign trade moved via Fiume, Peace Handbook No. 8, Great Britain Foreign Office

[4] To make conditions still worse, the northeast winds which prevail in winter are likely to make the coast waters on the Italian side extremely rough and muddy. The muddy water makes the detection by aircraft of submarines attacking Italy difficult. An added handicap is the fact that the currents are such as to carry drifting mines to the west, not to the eastern shore, and lastly the shallow depth makes mine dropping from above much easier than along the Dalmatian coast

railways join the coast with the interior; practically all the north-south traffic is via the sea, no railway or road paralleling the coast from Fiume southward.

Politically the Adriatic has again become an Italian Lake but the future of the two ports of Trieste and Fiume, particularly the latter is not so promising. Both have been primarily transit ports dependent upon a hinterland now entirely foreign territory with all the uncertainties of customs barriers and national enmities to jeopardize their commercial life. A promising beginning has recently been made whereby special port privileges have been granted to Hungary so that some revival may be expected, but the loss of Jugoslavian business will be keenly felt. Commercially the growth of both cities hinges upon the elimination of tariff barriers to a hinterland which is non-Italian. The possession by Italy of both ports as well as the fringe of Italian cities on the eastern Adriatic and the Trentino at the north must be considered to be primarily for their strategic value. Lying as they do at the extreme outer corner of Italian territory they cannot be expected to serve Italian commerce. Furthermore there is little point in spending the huge sums needed to develop Fiume's harbor with Trieste's already prepared to handle the traffic, since both are within Italy and close together. Furthermore Trieste being farther from the frontier is much more easily protected from land invasion in war than is Fiume where a city street serves as the international boundary. For the first time in centuries Italy has possession not only of its "Alpine roof" but of its "back door" and the Adriatic alley leading to the great Mediterranean thorofare. Its improved strategic frontiers should make possible a material reduction in its army and navy burden thus materially improving its strained economic condition.

NATIONAL COUNCIL MEETING

December, 1928

The next annual meeting of the National Council of Geography Teachers will be held at Teachers College, New York City, December 26 and 27, in conjunction with the American Association for the Advancemnt of Science. The Association of American Geographers will hold its meetings in New York the same week. Since this year marks the twenty-fifth anniversary of that organization

the officers are endeavoring to make the program a particularly attractive one. For this reason an unusually large number of geographers may be expected in New York at this time. A number of well known geographers and other educators have also been secured to address members of the National Council. All members of the Council are urged to take advantage of the extraordinary opportunities offered by the programs of the three organizations. New York is easy of access and offers many inducements to visitors from other sections of the country. *This is an unusual year and you should make your plans now.* Headquarters will be at Hotel Bretton Hall, Broadway and 85th Street, only ten minutes from Teachers College by the Subway. The Subway station is at the Hotel entrance. Make your reservations early and state how long you expect to stay. Rates are as follows:

Single room, with private bath	$3.50 per day
Single room, without bath	2.50 per day
Double room and bath, for two persons	each 2.50 per day
Parlor, bedroom and bath for four persons	each 2.00 per day

Reduced railroad rates, on the usual certificate plan, of a fare and one-half will be available for the meeting. Watch the *Journal* for future announcements.

GEOGRAPHICAL PUBLICATIONS

C. S. Cooper. **Latin America—Men and Markets.** 466 pp., 34 photos. Ginn and Company, Boston. 1927.

Latin America is a field in which up-to-date books are needed, and this book fills a certain place in the field. The author follows the desirable but oft neglected practice of writing from a particular point of view for a particular audience. The point of view is that of American business and the audience is assumed to be of American business men, present and prospective. It has a place because it covers all of Latin America, gives a true impression of certain Latin American characteristics, and is readable.

Its place is not large nor permanent. It is not an original contribution to knowledge but a presentation of facts already known and recorded elsewhere. For detailed information there are other publications more concise and more accurate. For characterization and interpretation of Latin American countries it is no more satisfactory than other current books and is far from being the last word on the subject.

It is the book of a traveler and facile writer rather than of an expert scholar. There are not only minor errors and inconsistencies, but various failures to discriminate among facts and to interpret them. Expert in a few cases the author has avoided the common fault of stating peculiar facts as if they were general, but in various cases he has not escaped the less well recognized tho equally insidious fault of stating general facts as if they were peculiar. Modern geographic thinking is not in evidence, and the

very use of the word "geography" as a section heading discloses archaic ideas of the content of the subject.

Some parts of the book are much better than others. Altho limited to certain phases of Latin America, the field is still a large one—too large to be well covered by the author. The virtue of generalizing satisfactorily on certain aspects of Latin America is accompanied by weakness in dealing with particular countries. On the whole, the southern countries of South America are treated with sympathetic personal interest and enthusiasm, while the Caribbean countries are packed into undiscriminating, uninspired text in secondary compendium style. One might guess that the author had written after traveling to South America via the Panama Canal, having a tourist's view of the Isthmus; touching the coast of Ecuador; visiting Peru, Bolivia and Chile; crossing the Andes to stay for some time in Argentine, Uruguay, and populous parts of Brazil; and returning to the United States via the east coast, perhaps touching at one or two of the Lesser Antilles. He seems to speak from personal experience when he says that "the characterization of Argentina is less difficult than is that of many of the South American and Central American republics," and that "among all the republics of Latin America, Mexico . . . . is perhaps the least known."

For a helpful introduction to the Latin American spirit in business relations and for intelligent impressions of the countries of southern South America, especially their inhabitants, look into this book; for other things look elsewhere.

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Angela M. Broening. **Individualizing Geography Instruction.** 112 pages. Mayer and Thalheimer, Baltimore. 1927.

In *Individualizing Geography Instruction* Miss Broening has produced another of her many helpful contributions in geography method and procedure.

The book will be found helpful to the specialist in geography and to the city superintendent who has a desire and the finances to develop the work as it has been at Baltimore, under the leadership of Miss Broening. To such, the book suggests methods, source materials, and bibliographies.

To the average teacher, poorly trained in geography, or working without trained supervision, the book is less helpful. Such a teacher would find it befogged with educational nomenclature and over-burdened with professional method and procedure. The most helpful parts would be those on field trips, visual materials, appreciation, projects, library readings, and dramatization.

One wonders if, with so much individualization, the child will obtain an organized body of knowledge concerning the country or region studied. Will not his information be "patchy" with the emphasis upon that which he likes best? How can a child be expected to learn the essentials concerning all angles of the region when some other child has done the work?

It appears to the reviewer, that we geographers have harped long enough on the aims and values of geography. The average superintendent believes in geography but is waiting for us to show him what to offer in given grades. We must come to some agreement, at least partially. For example, we would not even agree upon Miss Broening's idea of the content of junior high school geography. Many of us would wish to make junior high school geography center around the United States and its world relations and would use Miss Broening's idea, elaborated, for the senior high school.

CLYDE E. COOPER

Ohio University, Athens, Ohio

Clark Wissler. **Man and Culture.** 377 pp., 17 figures (10 maps). Crowell Co., N.Y. 1923.

Gregory, J. W. **The Menace of Color.** 264 pp., 8 photos, 14 maps. Lippincott, Philadelphia. 1925.

1. Geographers are becoming increasingly interested in what makes man act as he does. The influence of the physical environment are seen clearly in variations in man's culture. If the broader definition of environment which is coming into use is accepted, namely, that environment includes not only the physical environment but also the biologic and social environment, many geographers should be interested in this book. Here the Curator of Anthropology of the American Museum of Natural History of New York, now also a professor at Yale University, treats in an authoritative and unique way the world's culture. For each of the chief cultural types, he considers its characteristics and the distribution and the factors affecting its genesis and spread. The final 100 pages deals with the relation of culture to man.

2. This is an expansion of the presidential address given in 1924 to the British Association for the Advance of Science, Geographic Section. It is "a study of the difficulties due to the association of white and colored races, with an account of measures proposed for their solution, and special reference to white colonization in the tropics."

Dr. Gregory, a leading British scientist, has in this book supplied a very helpful summary of the data on the racial conflicts. It is well written, calm, and reasonably hopeful. Everyone interested in racial conflicts or in tropical settlement will find this book worth reading.

S. S. VISHER

Indiana University

Bessie L. Ashton. **The Geonomic Aspects of the Illinois Waterway.** 177 pp., 12 maps and grafs. University of Illinois Studies in the Social Sciences, Vol. XIV, No. 2. University of Illinois, Urbana. June, 1927.

Miss Ashton's contribution to the geonomics of our interior waterways is well balanced and complete. Dealing in detail with the Illinois waterway, her first chapter presents the history and characteristics of the present waterway. She then proceeds to a discussion of the proposed Illinois River project, covering the route suggested, the type of boats to be accommodated, the terminals, the competing system of land transportation, the potential traffic, and the transportation companies which are at present available to carry on service on the proposed waterway. Her final chapter summarizes the results of her studies and offers her conclusions as to the value of additional waterway development. Her eleven conclusions indicate essentially that the development of the waterway is not at present advisable. The maps and grafs with which the study is illustrated tell their part of the story adequately, altho thru an error in reproduction the relief map of Illinois, which is used as a frontispiece, is so reversed that the rivers seem to run along sharply defined ridges.

PRESTON E. JAMES

University of Michigan

Arthur Newton Pack and E. Laurence Palmer. **The Nature Almanac—a Handbook of Nature Education.** 311 pp. American Nature Association, Washington, D.C. 1927.

This is a valuable handbook in Nature lore for all who are interested in children, whether they be parents, teachers, or scout leaders. The authors have made a distinct and much needed contribution to Nature-Study literature.

The scope of the work is suggested by the following topics taken from the Table of Contents: A Nature Calendar; Associations and Clubs Interested in the Promotion of Nature Education; Training Teachers for Nature Education; A Nature Education Survey of the United States; School Nature Outline, and Nature Bibliography.

This is a reference book for which teachers and superintendents will find frequent use. Of special value is the Nature Education Survey of the United States. This is the most exhaustive survey ever published in this field and gives definite information regarding the actual status of Nature-Study in the various states.

GILBERT H. TRAFTON

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James B. Gillett and Howard R. Driggs. **The Texas Ranger.** 218 pp. 65 illustrations. World Book Company, Chicago. 1927. $1.20.

A small volume called The Texas Ranger has been added to the Pioneer Life Series. It gives the actual experiences of Captain James Gillett, a Texas Ranger of pioneer days, told by him, edited by Howard R. Driggs, Professor of English Teaching, New York University.

The experiences here set down are as interesting as fiction, and are important as well, giving as they do something of the history of the great Southwest. Incidentally, the geography of southwest Texas is graphically described.

The part played by Texas Rangers has always been important. In pioneer days they upheld the law on a lawless frontier, defending citizens from the depredations of Indians and Mexicans, and bringing to justice American criminals. Largely thru their service, the great Southwest was made safe for the developmnt that has come. Later the Rangers furnished an intrepid fighting force in the Civil War and in the Spanish-American War. This story of their service in pioneer days will be found a valuable addition to the supplementary reading on the grades.

HARRIET SMITH

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